March 23, 2018

U.S. Department of Transportation
Docket Operations
1200 New Jersey Avenue SE
Washington, DC 20590

Re: Updated Comments Concerning Removing Regulatory Barriers for Vehicles with Automated Driving Systems
Docket Number: NHTSA-2018-0009-0008

Disability Rights Education and Defense Fund (DREDF) is pleased to submit in response to the National Highway Traffic Safety Administration (NHTSA) request for comments regarding regulatory barriers for vehicles with automated driving systems (ADSs). DREDF thanks NHTSA for its work to date to ensure safety for disabled passengers, pedestrians and bicyclists.

DREDF is a leading national civil rights law and policy center directed by individuals with disabilities and parents who have children with disabilities. Our mission is to advance the civil and human rights of people with disabilities through legal advocacy, training, education, public policy and legislative development. DREDF demonstrated an early interest in the development of equitable autonomous vehicle policy in its drafting of the 2015 National Council on Disability report, Self Driving Cars: Mapping Access to a Technology Revolution.[i] The report examines the challenges and advances in autonomous vehicle (AV) technology, and proposes directions for research, development, and necessary infrastructure changes. The report also explores potential policies and legislation needed to ensure full access.

Autonomous vehicles (AVs) have the potential to dramatically improve the lives of people with disabilities and increase the safety of our streets. More than half a million people with disabilities never leave home and cite transportation difficulties.[ii] Children with disabilities are more than five times as likely to be hit by a motor vehicle as a bicyclist or pedestrian than children without disabilities.[iii] Many people with disabilities cannot drive or lack access to a personal vehicle. Only 45% of rental households with individuals who use wheeled mobility devices have access to a personal vehicle.[iv] The American with Disabilities Act (ADA) guarantee of accessible transportation, equivalent service and anti-discrimination provides a needed framework for AV service providers.

The promise and safety of AVs will only be realized if vehicles are fully accessible, the ADA upheld, and safety elements take into account the needs of people with disabilities. Consideration of standards that allow for the quickest path to development and deployment of fully accessible AVs can be best achieved in consultation with experts and the disability community, including the US Access Board, disability organizations, and the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA). To that end, we ask you to consider the following.

To questions 13 and 14, whether NHTSA conducts research on the need for occupants to have access to non-driving controls in fully-self driving-vehicles, and whether occupants should be able to see to the side and behind the vehicle using mirrors and cameras:

While vehicles may provide the option to access non-driving controls, or see outside the vehicles, level 5 vehicles must not require passengers be able to do so. In order for people with disabilities to use AVs independently, there must be testing, research and requirements that allow passengers who may not be able to operate controls, or see outside the vehicle, to travel alone.

To question 12c, whether research should be conducted to determine whether any additional controls (such as an emergency stop button) might be necessary for safety or public acceptance:

Research should be conducted to determine the need for emergency stop buttons and features that allow passengers to contact a service provider, or emergency services.

To questions 16 and 17, whether the conventional seating arrangement should affect crashworthiness, and how the agency should address emergency controls accessed in unconventional means:

Standards must be set and crashworthiness safety features studied and adopted for any vehicles where the current driver or front passenger seats are not facing forward. In addition, crashworthiness studies should be continued and standards set for AV passengers who travel while using their wheelchairs in the vehicle. Current NHTSA studies and standards regarding air bag switches, and the effectiveness of air bags to reduce injury for wheelchair users facing forward, must be considered in research and development. Research and studies indicating safety effects for rearward-facing occupants must also be considered.

DREDF also notes the work between NHTSA and the University of Michigan Transportation Research Institute (UMTRI), recent wheelchair occupant safety studies[v] reports, and NHTSA's presentation on its own wheelchair safety testing.[vi] Standard 208, occupant crash protection s4.2 addresses vehicles manufactured for operation by persons with disabilities. Currently, vehicles may be equipped with a complete automatic protection system or a belt system. DREDF encourages NHTSA and industry stakeholders to prioritize testing of fully accessible securement systems and crashworthiness by incorporating these issues into planning, research and development.

Emergency controls accessed through unconventional means such as a smartphone or multi-purpose display must be accessible for people who are blind or low vision, Deaf or hard of hearing, and must be user-friendly with text and instructions written in plain English. The same must hold true for any telltales that remain or are provided.

To question 19, whether there are specific barriers that NHTSA needs to resolve and what could be addressed through research by outside stakeholders:

As fully autonomous passenger vehicles are developed (and we urge OEMs, NHTSA, USDOT and all stakeholders to work towards that goal), strenuously tested and automatic wheelchair securement, lifts and ramps must be available. Additional research and development could lead to universal, functional, reliable, and safe automated securement systems. These systems would not require an on-board operator for power or manual wheelchair users. Developers must address the issues of whether wheelchair users can reach and operate seat and shoulder belts, and any controls needed to deploy automatic securement. Systems could be reviewed in consultation with the US Access Board and RESNA, including the RESNA standards committee on wheelchairs and transportation. Standards should be set and factors such as: cost; maintenance requirements; quality; the need for mobility device standards; whether the systems would provide adequate safety; and crashworthiness for all wheelchair users must be determined.

To question 4, whether FMVSS provisions that pose barriers to testing and certification of new vehicle designs were not covered in the Volpe report or Google letter.

DREDF encourages NHTSA and Virginia Tech researchers to consider standards 403 and 404, platform lift systems and platform lift installations. Both standards require primary control panel switches for public use vehicle lift operation to be positioned in a location that allow the operator to have a direct, unobstructed view of the platform lift passenger. Fully automatic securement systems may allow wheelchair users to travel and secure without the need of an aid or bus operator to assist in securement. In public use vehicles without an operator present, control panel switches may be replaced by a camera that allows an off-site operator to deploy the lift. Whether an off-site operator would suffice to meet the standard must be considered and discussed with disability community representatives. A backup control may need to be within site of the lift.

Consulting with the Community

In addition, DREDF recommends that NHTSA works in consultation with the US Access Board and representatives from the disability community as new technology, vehicle designs and safety features are developed to ensure full accessibility and safety for all.

Thank you, again, for the opportunity to provide comment. As NHTSA develops and fine-tunes the 3.0 framework, and consider FMVSS changes or new regulations we hope you will take these recommendations into account. Please contact Carol Tyson, Government Affairs Liaison, at (202) 878-9186 or ctyson@dredf.org with any questions. DREDF looks forward to continuing to work with NHTSA and the broader AV stakeholder community to ensure access, safety, and equity are realized.

Sincerely yours, &

Susan Henderson
Executive Director

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[i] National Council on Disability (November 2015). Self-Driving Cars: Mapping Access to a Technology Revolution. Source: https://www.ncd.gov/publications/2015/self-driving-cars-mapping-access-technology-revolution

[ii] USDOT Bureau of Labor Statistics [Issue Brief #3] (2003). Transportation Difficulties Keep Over Half a Million Disabled at Home. Source: https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/special_reports_and_issue_briefs/issue_briefs/index.html

[iii] Xiang, Huiyun. (2008). Secondary Injuries Among Individuals with Disabilities. Center for Injury Research and Policy. Source: https://www.nationwidechildrens.org/cirp-secondary-injuries-among- individuals-with-disabilities

[iv] University of Kansas Research & Training Center on Independent Living [Infographic] (2014). Housing for People with Disabilities: The On-ramp to Community Participation. Source: http://rtcil.org/cl/projects/r1/infographic

[v] Schneider, Lawrence W., Miriam, A. Manary, Nichole R. Orton, Jingwen H. Hu, Kathleen D. Klinich, Carol A. Flannagan, Jamie L. Moore (July 2016). Wheelchair Occupant Studies, University of Michigan Transportation Research Institute. UMTRI-2016-8. Source: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/umtri-2016-8-wheelchairoccupantstudies.pdf

[vi] Presad, Aloke and Doug Weston (January 2017) [PowerPoint Presentation]. NHTSA's Wheelchair Safety Testing. Source: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/sae2017aprasad.pdf